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long or much shorter, mostly unbranched, terminated by a 4-to 10-flowered glomerule; flowers borne singly in the axils of white scarious cuspidate bracts, the very short pedicel similarly bi-bracteate; sepals 5 to 6 mm. long, oblong-lanceolate, cuspidate, coriaceous, shining, plainly but not prominently few-nerved, scarious-margined; inner sepals shorter, barely cuspidate; stamens 6, nearly equalling the inner sepals, anthers when moist about 2.5 mm. long by 1 mm. wide; ovary oblong, equalling the included style; stigmas 2 to 2.5 mm. long; capsule narrowly oblong, acute, 3-sided, exceeding the sepals by 1 mm. or less, rigid-coriaceous, 3-celled, valves spreading but slightly in dehiscence; seeds closely packed and misshapen, with a conspicuous raphe and short tails, body about 1 mm. long, oblong, reticulate, the areas themselves smooth or faintly reticulate, not lineolate.

This rush is most nearly related to Engelmann's *Juncus acutus sphaerocarpus* (*J. robustus*, Wats.) and, less closely, to *J. Ræmerianus*. It agrees with both in its stiff, erect, stem-like, pointed leaves, pseudo-lateral inflorescence, and glomerate flowers; and differs from both in its simpler inflorescence and much larger flowers and fruit, from the former in its cuspidate sepals and narrower capsule, and from the latter in its rigid coriaceous sepals.

Since making the observations on the Death Valley specimens, I have found in the National Herbarium, under the name *J. compressus*, a specimen of *J. Cooperi*, collected by C. R. Orcutt, in 1868, at Borrego Springs, Colorado Desert, California. It is probable, therefore, that the species will be found more widely distributed in the deserts of southeastern California. Mr. S. B. Parish informs me that he has looked carefully for the plant at Camp Cady, its type locality, but has failed to find it. Dr. Cooper undoubtedly found the plant farther out in the desert than has been supposed, in some alkaline marsh.

FREDERICK VERNON COVILLE.

Botanical Notes.

Aster undulatus, L. One of the ligulate florets from a plant of this species was found to have three well-developed style-branches. The branches were all alike and also like the style-branches of other ligulate florets. The stigmatic papillæ were along their margins [as shown in I. 2 is the normal style of the ligulate floret and its branches].

Mikania scandens L. A floret of this plant was found which had two of its filaments united. All the anthers were slightly united and were not essentially different in shape or size from other specimens examined. The filament in this species is made up of two distinct parts. There is a joint in the filament about .25 mm. below the base of the anther. Above this joint the tissue is made up of cubical cells. Their walls are comparatively thick and the tissue which they form is transparent. In the rest of the filament the cells are elongated, and the tissue they form is not transparent. The union of the filaments, in the case under consideration, begins in the transparent tissue, but is complete only in the portion below the joint.

Hybrid, or not? In the March (1891) number of the BULLETIN, I called attention to the sterility of the achenia of *Solidago serotina*. Ait., var. *gigantea*, Gray, and mentioned that "this, taken with the place of growth and the intermediate character, would be evidence enough, at least, to suggest" that the plant is a hybrid. This judgment was based upon the principles governing the determination of a wild hybrid, as set forth in Bentham's "Handbook of the British Flora," P. L. I wish to add that a careful examination of the plants of this kind in the stations of our Flora has failed to show one filled seed. W. W. ROWLEE.

New Localities for Rare Plants. *Hibiscus grandiflorus*, Mx. —This well-marked species grows abundantly in an open swamp near White Hall, Greene County, Ill. This station is 70 miles north of St. Louis, and I believe the farthest north it has been recorded.

Though closely allied to the showier *H. Moscheutos*, it is readily distinguishable by the velvety pubescence clothing the entire plant, cordate leaves and hirsute pods.

Veratrum Woodii, Robbins. At numerous times in the past few years, in the months of July and August, I have seen specimens of *Veratrum* growing on a brushy hillside near Upper Alton, Madison County, Ill. I only caught fleeting glimpses of it from a passing train, but so conspicuous a plant is *Veratrum* that it was easily recognizable as a member of the genus.

I have this season had an opportunity to examine specimens and find as I expected, that it was *V. Woodii*. It is a well-marked species, easily distinguishable from *V. viride*.

Some of the specimens were 5 feet in height, the huge panicle over 2 feet in length.

In Patterson's catalogue but one locality is given for this plant, namely, Hancock County, collected by Mead. Will likely be found in other localities in the southern part of the State, where it should be expected.

I have specimens collected near St. Louis, Mo., by Letterman.

FRANK E. McDONALD.

Reviews of Foreign Literature.

The Lichen Genus Cladonia. The above is the subject of an extremely interesting paper, published in the spring of 1891, by G. Krabbe, of the Univ. of Berlin.

The investigations for this work were begun in 1880, therefore covering a period of ten years. The work is very complete and exhaustive; studies in the field and laboratory combine to make the whole a thorough history of the development story of this genus. It was undertaken, the author says, in reference to three special features. First, the significance of the upright portion of the thallus or podetium; second the peculiar morphological significance of the polymorphism exhibited by this organ; third the question of sexuality which he claims can be studied here with more certainty than in other genera, because the development of the apothecia can be more easily traced here. In regard to the morphology of the podetium, there is a difference of opinion among lichenologists, some claiming it is the upright portion of the thallus, others that it is itself the thallus, and that the horizontal portion which precedes its formation in an organ corresponding to the protonema of the moss. Krabbe differs from both these views, and considers the podetium the homologue of the fruit body of the ascomycetes. In this way is found another argument for the double nature of the lichen, though this is now so generally recognized, that throughout the article the regular fungus forms are spoken of as the ascomycetes without algæ and the lichens, as ascomycetes with algæ.